

The Future of Professional Officer Education in the German Armed Forces

**A Monograph
by
Lieutenant Colonel (General Staff) Torsten Walter
German Army**



**School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas**

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Approved by:

William J. Gregor, Ph.D. Monograph Director

Michael E. Hutchens, CMDR, US Navy Monograph Reader

Stefan J. Banach, COL, IN Director,
School of Advanced
Military Studies

Robert F. Baumann, Ph.D. Director,
Graduate Degree
Programs

Abstract

THE FUTURE OF PROFESSIONAL OFFICER EDUCATION IN THE GERMAN ARMED FORCES by Lieutenant Colonel (General Staff) Torsten Walter, German Army, 42 pages.

In 2004, the Führungsakademie der Bundeswehr released a concept for the realignment of field grade officer development. The concept claims to respond to the requirements of the contemporary and future operating environment and attempts to ensure lifelong professional education. The reform acknowledges the growing complexity of joint, interagency, and multinational strategic considerations in the aftermath of the Cold War. A key element in the Bundeswehr's response to changes in security needs is to look actively for insights into long-term changes in doctrine, concepts of operation, and organizations. In this context, the ability of the field grade officer to analyze and deal with change is crucial to the Bundeswehr's adaptation to change. Hence, the focus of this research was an assessment of the ability of the Bundeswehr's educational reform to develop and foster critical, creative and logical thinking among German officers.

To assess the Bundeswehr's educational reforms it was necessary to establish criteria with which to make the assessment. The criteria were derived by comparing the skills required by the contemporary security environment and adult education theories related to the required skills. Those findings were grouped into a rough model to assess both the Bundeswehr's reforms and the new curricula.

The analysis of the Bundeswehr's professional military education system reveals that portions of the system provide the educational basis for producing field grade officers who can learn and adapt in a complex security environment. The strongest parts of the system are the initial university education and the General Staff Officer Education. In those programs, the officer has adequate time to reflect upon and repeat experiences developed through practice. Those programs also provide the academic context needed to understand the contemporary security environment from the perspective of a complex system. The other courses in the educational system lack important elements to have much influence on a field grade officer's ability to learn and adapt effectively. While it seems the General Staff Officer Education provides the best program in which to develop a field grade officer's self-directed learning skills and his ability to cope with complexity, most officers do not attend that course. Thus, the results of the research suggest four recommendations to improve the German field grade officer's ability to learn and adapt. First, the Bundeswehr must implement a service wide synchronized professional officer education strategy that provides a detailed rationale for educational requirements. Second, the Führungsakademie der Bundeswehr must incorporate learning objectives into its curricula that reflect self-directed learning and coping with complexity. Third, the Führungsakademie der Bundeswehr must focus on military theory and military history that facilitates self-directed learning and coping with complexity in a professional military environment. Finally, continuing education must be mandatory at the senior level.

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Introduction

In 2004, the German government launched a program to transform the Bundeswehr. The transformation sought to enable the Bundeswehr to cope with current and future developments in the security environment. The main aim of this on-going forward looking process has been to produce armed forces able to carry out assigned tasks effectively. The transformed Bundeswehr will possess modern reliable equipment, highly motivated soldiers and officers, and improved agility and performance. The transformation does not aim to achieve flashy, short-term successes. The Bundeswehr wants to find lasting solutions that enable long-term development and provide the flexibility and adaptability needed to meet future threats.

As part of the overall transformation of the Bundeswehr, the Führungsakademie der Bundeswehr¹, in coordination with the Federal German Ministry of Defense, released a concept for the realignment of field grade officer development within the German Armed Forces. The concept promises fundamental changes in field grade officer development and attempts to ensure lifelong professional education to keep all field grade officers up to date.² The 2004 professional education concept modified the existing education system and embraced the idea of providing continuing education (lifelong learning) through a modular system of two-week courses.

Furthermore, the reform of 2004 claims to respond to the requirements of the contemporary and future operating environment. The reform wants to respond to changes in warfare in accordance with German security policy. The reform acknowledges the growing complexity of joint, interagency, and multinational strategic considerations in the aftermath of the Cold War. Thus, the need to look actively for insights into long-term changes in doctrine,

¹ The Führungsakademie der Bundeswehr (FüAkBw) in Hamburg, Germany is the central institution of the Bundeswehr for field grade officer education.

² Führungsakademie der Bundeswehr, *Konzept zur Neuordnung der Stabsoffizierausbildung der Streitkräfte* (Hamburg, Germany: 2004), Abstract.

concepts of operation, and organizations is a key element in the Bundeswehr's response to changes in security needs. In this context, the ability of the field grade officer to analyze and deal with change is crucial to the Bundeswehr's adaptation to change.

Military analysts have questioned the practical efficacy of the traditional military education system based on a series of formal educational programs spaced at particular times in an officer's career. Much of the debate about contemporary officer education has been about the distribution of time between theory and practice, the quality of instructors, and the length of study required. It is argued officers are too busy during their duty assignments to learn. The key question is not whether there should be more or less formal education or training but whether the institutional curriculum enables the officer to meet the contemporary and future needs of his profession³. Therefore, professional officer education deals with the fundamental question of how that education should be structured and what kind of techniques should be applied to enable field grade officers to succeed in their duties.

However, discerning the professional needs of German field grade officers is not easy. In the German military system there are two classes of field grade officers; the General Staff Officer and the Specialized Staff Officer. Each class of officer has associated with it a program of professional schooling. Despite the two career paths, frequently officers from each class serve in similar operational environments. Thus, while the education systems diverge, the duty assignments often converge, which means officers in both classes must deal to a certain degree with the same military requirements. The officers in both classes attend a series of formal courses after which they are expected to improve their professional skills over 25 years of self-directed

³ Robert M. Cervero, *Effective Continuing Education for Professionals* (San Francisco, CO: Jossey-Bass, 1998), 21. A profession is a service or community oriented occupation that applies a systemic body of knowledge to practical problems of relevance to society. Professional action is embedded in a specific context and is following organizational goals and institutional needs and is ultimately concerned with practice

learning. The question is whether it is practical to rely on experience and self-directed learning to develop an officer corps with the skills required by the contemporary security environment.

To determine whether the 2004 Education Reform meets the professional needs of the officer corps it is first necessary to examine the reform goals themselves in relation to the German operational environment. Next, it is important to develop some educational standards by which to assess both the reforms and the new curricula. Armed with a standard it is then possible to compare the educational practices with the curricula to determine whether the curricula and structure are likely to produce the required educational results. That said, the research reveals that in contrast to professional education theories' the Bundeswehr's emphasis on experience and self-directed lifelong learning does not address adequately the demands of complex operations and, thus, does not answer the professional development needs of German Specialized Staff Officers.

Professional Military Practice in a Volatile Environment

First, to understand and appreciate better the competencies a German field grade officer must possess, this section assesses the Bundeswehr's operational environment and the organizational expectations field grade officers have to meet. As this section will show coping with complex operations requires field grade officers to possess a systems perspective, a certain amount of professional contextual knowledge and the competence to communicate and interact in a team effectively. In addition, this section highlights that unreflected experience even can prevent the individual from approaching a problem in the right way.

To start with, the educational objectives of the Führungsakademie in general do not refer explicitly to the radical changes in the security environment. The White Paper 2006 on German Security Policy and the Future of the Bundeswehr stressed the radical changes in the security

environment that created new risks and threats.⁴ In 2007 the German Armed Forces Chief of Staff observed:

“Globalization and more pronounced asymmetry are factors that will have a decisive influence on the nature of future conflicts. In addition to wars between nation states, we will be increasingly confronted with disputes between state and non-state entities. We could also experience an increase in civil wars and terrorism mixed with organizational crime. These could prompt intervention by the international community in a variety of forms including evacuation operations of non-combatants, humanitarian assistance, and any combination of the above.”⁵

A successful response to these new challenges requires the application of a wide range of foreign, security, defense, and development policy instruments to identify, prevent, and resolve conflicts at an early stage. Former commander of the Führungsakademie, General Wolf-Dieter Löser, pointed out that today's and future field grade officers must have confidence in acting and in decision making even in such a complex unpredictable environment, where knowledge is of short term endurance and self-directed initiative and motivation for learning are key for success.⁶ Thus, the Bundeswehr needs to be ready to contribute to this wide range of options and requires a continuum of capabilities appropriate to the entire spectrum of tasks. The transformation of the Bundeswehr focuses on these operational tasks and the tasks in turn determine the capabilities and structure of the armed forces as well as the competencies German field grade officers must possess. Unfortunately, there is no single document among the many documents released since 2004 that focuses on the German officer's job description and his job related self-understanding

⁴ Federal Ministry of Defense, *White Paper 2006 on German Security Policy and the Future of the Bundeswehr* (Bonn, Germany: 2006), 1. Online at <http://www.bmvg.de/fileserving/PortalFiles/C1256EF40036B05B/W26UWAMT995INFODE/W%202000%20eng%20DS.pdf> (accessed February 14, 2010)

⁵ Wolfgang Schneiderhahn, Transforming the German Armed Forces – Political and Conceptual Principles for Procurement and Defence Technology, in CPM-Forum *German Defense Technology* (Sankt Augustin, Germany: Communication Presse Marketing GmbH, 2007), p.3.

⁶ Wolf-Dieter Löser, Die Führungsakademie der Bundeswehr im Kontext von Transformation, Bildung, und Ausbildung, in *FüAk – Reflexionen Nr. 9* (Hamburg, Germany: 2008), 2. Online at http://www.fueakbw.de/share/1/05_Publikationen/07_FueAk_Reflexionen/Jahrgang_2008/FueAk_Reflexionen_Nr9_02_2008.pdf (accessed October 14, 2009)

(Berufsbild des Offiziers) in context of the contemporary and future operational environment.⁷

Furthermore, not a single document provides an answer to how the competencies of General Staff Officers differ from Specialized Staff Officers. Therefore, the only source of reference is the Führungsakademie. The articulated professional officer education objectives as of 2004 are competence development in the domain of military trade skills, as well as enhancement of the officer's intellectual and professional self-concept. Service personnel with analytical skills are able to make political, social and ethical judgments and prognoses. Leaders with considerable intercultural and social competences are capable of holistic thinking and they are able to communicate, to motivate, and to deal with conflicts. To determine what professional competencies German field grade officers must possess in their respective environment and to assess Bundeswehr educational methods, in relation to adult education theories, it is essential to understand complex contingencies and the related theories of complexity.⁸ Those theories argue that field grade officers need to master systems thinking, interpersonal communication and teamwork, organizational management, and far more importantly, they need to comprehend the overall process of team learning.

Coping with Complex Adaptive Systems

Systemic understanding of a situation is a precondition for more relevant planning and decision making. Carl von Clausewitz denies the predictability of war and emphasizes that war is characterized by fog and friction. His concept refers to uncertainties, errors and the unforeseen

⁷ Bundesministerium der Verteidigung, Führungsstab des Heeres, *Anforderungen an den Offizier des Heeres* (Bonn, Germany: 1994), *passim*. In July 1994 General Helmut Bagger, at that time Chief of Staff of the Army, released the “Anforderungen an den Offizier des Heeres” (Demands on Army Officers) as an aid for orientation after the end of the Cold War. That document defines professional army officer requirements in general and is still valid. However, that document does not address the professional officer corps as a whole.

⁸ Bundesministerium der Verteidigung, Führungsstab der Streitkräfte, *ZDV 1/01 Einsatz- und Operationsführung der Bundeswehr, Entwurf vom 31.3.2008* (Bonn, Germany: 2008), 28. Solely drafted Centralized Armed Forces Regulation 1/01, Mission and Operations Command, slightly touches the topics complexity and adaptability.

events that are a constant element in all wars. Clausewitz's concept calls for a high degree of flexibility, agility and intuition. Fog and friction distinguish real war from theory. Additionally, war is always a struggle between two wills and, therefore, it is impossible to foresee the enemy's reactions. Thus, "war is the realm of chance," the ability to exploit opportunity. Clausewitz also claims that war is never autonomous, for it is always an instrument of policy. The political goal or policy itself may even change during a war in response to the enemy or events.⁹ "Warfare is not subject to a simple linear relationship of output effects proportional to the input of combat force."¹⁰ Instead, war is a nonlinear phenomenon that changes its character in ways that cannot be predicted analytically. Nonlinear systems are unstable, because all input values for the variables can lead to unpredictable, irregular behavior by the system. Moreover, the system's variables cannot be effectively isolated from each other or from the context, because dynamic interaction is one of the systems defining characteristics.¹¹ Consequently, wars are inseparable from their parameters, which set the context and the variables within the system. As a result, continuous change is an inherent characteristic of complex adaptive systems¹² and complex situations are always unique and require individual approaches. Finally, the amount of information that is flowing, the rate of change and the increasing interdependency of society are both aspects of today's growing complexity.¹³

⁹ Peter Paret, "Clausewitz", in *Makers of Modern Strategy*, 2nd ed., ed. Peter Paret (Princeton University Press, 1986), 202.

¹⁰ F. John Burpo, The Great Captains of Chaos: Developing Adaptive Leader, *Military Review* January-February 2006 (Fort Leavenworth, Kansas: U.S. Army Combined Arms Center, 2006), 65.

¹¹ Alan Beyerchen, "Clausewitz, Nonlinearity, and the Unpredictability of War", *International Security*, vol. 17, no. 3 (Winter, 1992-1993), 68. Online at <http://links.jstor.org/sici?doi=01622889%28199224%2F199324%2917%3A3%3C59%3ACNATUO%3E2.0.CO%3B2-3> (accessed October 17, 2009)

¹² Robert Axelrod and Michael D. Cohen, *Harnessing Complexity: Organizational Implications of a Scientific Frontier* (New York: Basic Books, 2000), xi.

¹³ Yaneer Bar-Yam, *Making Things Work: Solving Complex Problems in a Complex World* (Cambridge, MA: Knowledge Press, 2004), 13.

The first step to initiate change is to recognize consciously the requirement to respond to new threats and challenges. Therefore, to approach the right problem in the right manner, it is necessary to define or frame and to analyze the operational environment first and identify the problem as a consequent result.¹⁴ Mary Jo Hatch describes the environment as a network of actors that interacts with, affects or is affected by every organization. Hatch also highlights the need to analyze conditions and trends as forces that have an effect throughout the environment. This analysis is needed to fully appreciate the links between the organization and its environment. Those links are within cultural, social, legal, political, economic, technological, and physical sectors and they contribute to global complexity and change.¹⁵ Therefore, the field grade officer as member of a staff must identify the links between his organization and others and must consider conditions and trends within the environment. Additionally he must assess how these conditions and trends can affect the relationships of the inter-organizational network. Such an approach will help the military professional to analyze the adversary as well as friendly options, and also strengths and weaknesses and how actions might have an impact on the system. Dietrich Dörner points out the more facts we know, the better we can judge.¹⁶

Moreover, to understand the system presupposes a basic knowledge about the sectors and actors within the larger system. Those sectors and actors and how they interact might be far beyond the traditional military domain. Because the impact of a vast array of factors onto a system is indefinable, those factors must be appreciated in the light of probabilities. To consider probabilities adequately requires logical reasoning and intuition in order to draw the correct conclusions. Whereas a staff officer usually sticks to the facts, those in command rely on judgment rooted in intuition, common sense, and experience to counter a chaos of opinions and

¹⁴ Ibid, 262.

¹⁵ Mary Jo Hatch, *Organization Theory* (Oxford, UK: Oxford University Press, 1997), 76.

¹⁶ Dietrich Dörner, *The Logic of Failure* (New York: Metropolitan Books, 1989), 41.

considerations that fatally entangle judgment.¹⁷ To the military professional, a multi-perspective approach helps to understand, analyze and manage the complexity behind a problem. Theories inform mental models and, therefore, theories are vital for field grade officers to develop an understanding of their respective environment as well as to use them as a shared language for dialogue and discussion. One way to approach new situations is to use available and agreed mental models to develop a new perspective. Because mental models are often used as a common frame of reference across groups and are based on a series of assumptions and beliefs about realities, theories can be challenged and adjusted. In this way, mental models and theories are flexible tools that articulate an evolving understanding in a way that is explicit, shared and open to challenge.¹⁸ Thus, a formal theory is a lens through which to view actions. Consequently, theories need to be seen as a starting point for critical thinking and must be incorporated into the professional officer education concept at an early point of an officer's career.

Managing complexity takes more than theory. It depends on teamwork. When a problem is complex, one person usually cannot successfully approach it alone, but organizations of people can, if they know how to work together in a coordinated and effective manner. So, making an effective organization is making a successful team that consists of individual competence and shared vision.¹⁹ The discipline of team learning implies dialogue and discussion that helps form a shared holistic understanding of the situation. Discussing varying perspectives, exchanging knowledge and ideas are vital to seeing all facets of a complex situation and to uncovering the

¹⁷ Beyerchen, "Clausewitz, Nonlinearity, and the Unpredictability of War", *International Security*, vol. 17, no. 3, 79.

¹⁸ David W. Robson, Cognitive Rigidity: methods to overcome it, 2005 *International Conference on Intelligence Analysis*, 2. Online at https://analysis.mitre.org/proceedings/Final_Papers_Files/40_Camera_Ready_Paper.pdf (accessed December 10, 2009)

¹⁹ Peter M. Senge, *The Fifth Discipline* (New York: Currency Books, 1994), 236.

nature of the problem.²⁰ To create unity of action within a team requires a common language and shared terminology in which to discuss and establish a shared understanding of the problem and the complexity involved in developing comprehensive solutions. Senge adds that when dialogue is joined with systems thinking there is the possibility of creating a language more suited for dealing with complexity and of focusing on deep-seated structural issues and forces rather than being diverted by questions of personality and leadership style.²¹ Additionally, to learn, anticipate and adapt as a team in a rapidly changing environment reduces the risk of failure.²²

Continual reflection²³ through constructive dialogue can create new perspectives as well as approaches towards a complex situation and, therefore, fosters the learning of the whole organization. Reflection requires all participants to challenge constantly existing understanding and to assess its relevance. Even the process by which the respective military organization learns must be a subject to reflect on collectively, thereby discover, and solve any ineffectiveness.²⁴ To achieve the best result of teamwork requires effectively integrating an outline of individual work and group conversations into the overall decision making process. Consequently, constructive interaction through dialogue and discussion prevents being trapped in irrelevant individual knowledge and experiences. The interaction of team members will multiply individual intellectual capabilities like critical and creative thinking and enhance situational understanding through

²⁰ Bar-Yam, *Making Things Work: Solving Complex Problems in a Complex World*, 259. The discipline of team learning involves mastering the practices of dialogue and discussion, the two distinct ways that teams converse. In dialogue, there is the free and creative exploration of complex and subtle issues, a deep "listening" to one another and suspending of one's own views. With discussion, different views are presented and defended and there is a search for the best view to support decisions that must be made at this time.

²¹ Senge, *The Fifth Discipline*, 268.

²² Eliot A. Cohen and John Gooch, *Military Misfortunes* (New York: Free Press, 1990), 17.

²³ Donald A. Schön, *Educating the Reflective Practitioner* (San Francisco, CA: John Wiley & Sons, 1987), 29. According to Schön new and unique situations depend less on factual knowledge or rigid decision-making models than on the capacity to reflect (think) before taking action. Reflection-in-action even occurs in the midst of action when the practitioner can still make a difference to the situation on hand.

²⁴ Dörner, *The Logic of Failure*, 195.

effective framing and reflection. In a wider sense, the participants of such a constructive interaction educate one another. This approach requires collaborative leadership and participation by the team members to encourage candid conversation and constructive criticism.²⁵ In fact, the practice of constructive interaction is sensitive to the quality of its participants and human interaction is still the single determining factor in failure or success.

However, individual or collective experience can prevent a military organization from identifying and approaching the relevant aspects of its operational environment. Experience is not an objectively neutral phenomenon. According to Jack Mezirow everything that is absorbed and registered in human minds adds to the collection of ideas stored in the memory. Therefore, essentially the more people have seen, experienced and absorbed the more points of reference they will have to help them decide which direction to take.²⁶ Consequently, each new experience enriches his repertoire. However, Bryan Lawson states that once people have seen something done in a certain way, or done it themselves, this experience tends to reinforce the idea in their minds and may block out other alternatives.²⁷ Thus, the individual or even organizational interpretation of a situation is strongly influenced by perceptual filters. The paradox is that the more experienced an individual becomes the more cognitively rigid he will be.²⁸ Unfortunately, any action to solve a complex problem may have hidden effects that cause matters to become worse and the whole strategy may be moving things in the wrong direction.²⁹ Mezirow even argues the individual tends to shape things so that they fit the current frame of reference.³⁰ To

²⁵ Senge, *The Fifth Discipline*, 241.

²⁶ Jack Mezirow, *Transformative Dimensions of Adult Learning* (San Francisco, CO: Jossey-Bass, 1991), 1.

²⁷ Bryan Lawson, *How Designers Think* (Boston: Architectural Press, 2006), 155.

²⁸ Robson, Cognitive Rigidity: methods to overcome it, 2005 *International Conference on Intelligence Analysis*, 1.

²⁹ Bar-Yam, *Making Things Work: Solving Complex Problems in a Complex World*, 14.

³⁰ Mezirow, *Transformative Dimensions of Adult Learning*, 26.

cope successfully with a unique situation every field grade officer needs to understand the nonlinear nature of his operational environment and that action taken based on experience in similar situations can lead to serious mistakes. Thus, field grade officers require certain situational awareness to prevent getting trapped as an individual as well as an organization in a monolithic way of thinking. So, the German emphasis on experience and lifelong learning can be successful if experience is combined with individual and organizational critical reflection.

The Role of the German Field Grade Officer

If the German field grade officer is going to exploit his experience, then his professional education must include study of educational methods. The hope is that field grade officers will learn how to evolve personally in response to change. However, changes in the national and international security environment are already affecting officer careers. To begin with, the Bundeswehr continues to rotate officers through command and staff positions. Both assignments have in common the professional requirement for the military officer to decide and act. Thus, the officer's concerns are intellectual and practical. Staff officers usually contribute actively to the commander's decision-making process by providing competent advice. Responsible advice as well as constructive criticism is based on expertise and intellectual competence. Similarly, for an officer to progress he also must be willing and able to receive constructive criticism from others and to engage in self-reflection. Professional competence requires looking for answers and solutions to contemporary and future challenges. Consequently, it is a continuing process to keep oneself up-to-date and to evaluate environmental developments. Therefore, an officer's development must include continuous learning and maturing judgment.

The German officer's concept of leadership is governed by *Auftragstaktik*³¹ and *Innere Führung*.³² *Auftragstaktik* requires an officer to understand military requirements at his organizational level and two levels above his command. *Auftragstaktik* provides officers freedom of action and the opportunities to learn from failure and to develop creative approaches to problem solving. Nevertheless, the officer's freedom of action is limited by the constraints and restraints of policy. The concept of *Innere Führung* colors military action and individual behavior politically and provides general political orientation for each soldier. As a "citizen in uniform", each soldier has to represent the values of the Grundgesetz (German Basic Law) even in war and armed conflict. Lastly, each officer not only must possess expertise in military operations within his specific service, but also in joint and multinational operations. Since the mid-1990's, the organizations vital to the security of Germany – the North Atlantic Alliance (NATO), the European Union (EU), the United Nations (UN) – have evolved significantly and have adapted to the new risks and challenges. However, each organization still uses individual Standard Operational Procedures (SOP) for decision making. To manage the expectations of each assignment successfully requires being familiar with those SOP's. Because field grade officers rotate position, they have to comprehend almost all levels of command and, thus, need to understand at least the specific characteristics of national and international policy and their interplay. Therefore, an officer must understand the national and international operational environment before he reports to his first field grade officer assignment.

³¹ Paret, "Clausewitz", in *Makers of Modern Strategy*, 212. According to Paret "Auftragstaktik" or mission oriented tactics is the policy of issuing directives stating the overall intentions of the supreme command, while leaving a high degree of initiative and the issuance of specific orders to subordinate commands.

³² Bundesministerium der Verteidigung, Führungsstab des Heeres, *Heeresdienstvorschrift (HDv) 100/100 Truppenführung von Landstreitkräften (TF)* (Bonn, Germany: 2007), 42. Military leadership is based on the objectives and principles of Innere Führung (leadership development and civic education) and combines military virtues and duties with the principles of modern leadership. Moral and legal foundations provide the framework.

Because the field grade officer's required skills arise from the needs of their duty assignments, the Bundeswehr's General Staff System differentiates between two categories of field grade officers – General Staff Officers and Specialized Staff Officers. Napoleonic warfare led Prussia to institute a method of continuous operational improvement. Gerhard von Scharnhorst recognized that an army would not always have a genius like Napoleon but that educated and capable officers serving in staff positions and advising a field commander could assure similar competence through an institutionalized system of officer preparation. In this context, Prussian reforms of the early nineteenth century addressed the requirement to evolve with change. Scharnhorst did not create a system or method for dealing with change; instead, he created an environment for critically examining and discussing military affairs and current events. In 1809 Prussia created the modern General Staff System. In 1810 the Prussian government established a school specifically designed to educate General Staff Officers. Officers selected to be students at the Kriegsakademie (War Academy) proved themselves in theory and practice. These officers were suitable for General Staff Positions and were, with further training and education, suitable for service as higher commanders.

The German General Staff System highlights the role of the chief of staff as the key advisor to the commander and coordinator of all staff work. The requirements of that position were and still are the criteria for General Staff Officer Education. Service as chief of staff implies the officer possesses vision, imagination, and perspicacity. Today, there are General Staff Officers in the Bundeswehr, but there is no General Staff Officer branch or corps. However, the overall concept of the General Staff System is still in place. The so-called Heusinger-Directive of September 1959 defines the General Staff Officer Service, *Generalstabsdienst*.³³ According to that directive, General Staff Officer Service is duty in a General or Admiral Staff Officer

³³ General Adolf Heusinger (1897-1982) was the first Chief of Staff, Federal German Armed Forces.

Position, specifically designated in the Tables of Organization and Equipment. It is also possible, however, that up to 20 percent of officers without General Staff Officer Education receive temporary assignments to such positions.³⁴ Although the operational environment demands the same high level of performance from both kinds of field grade officers, differences in their assignments require differences in their ways of thinking and consequently, differences in their professional education.

As mentioned earlier the problems associated with modern warfare have become so complex that they are beyond the grasp of any one person, no matter their seniority or experience. Thus, the education system demands early specialization in military training and education to create experts. Nevertheless, the educational system is not able to predict the career of each individual and, thus, it cannot adequately educate individuals. Instead, the Bundeswehr must prepare the vast majority of field grade officers to be Specialized Staff Officers and select a few to qualify them to become next Chief of the Army. Due to their qualification, General Staff Officers are the commander's advisors par excellence, designated section chiefs, or lead planners who need to have the ability to comprehend the whole as well as the parts.

In sum, the Bundeswehr must assess complex real-world uncertainties and postulate possible outcomes in order to formulate and implement appropriate actions. All field grade officers of the Bundeswehr are acting in a framework of jointness, multinationality, *Auftragstaktik, Innere Führung* and complex international system. Both classes of field grade officers need to understand complex adaptive systems theory; they must be able to recognize when change is necessary, and how to approach unique situations. Field grade officers in general must understand the demands that a complex environment places on military problem solving and the errors humans are prone to make when they attempt to meet them. The difference is that

³⁴ Christian O. E. Millotat, *Understanding the Prussian-German General Staff System* (Carlisle, PA: Strategic Studies Institute U.S. Army War College, 1992), 10.

General Staff Officers due to their assignments are managers of a system that consists of several subsystems. That task implies the General Staff Officer must possess the ability to create a shared understanding for subordinate officers and synchronize their actions toward a common goal. To consider the relationship of a larger number of internal and external actors requires that a General Staff Officer possess a different contextual knowledge. General Staff Officers are mainly assigned to the operational and strategic levels, which determine their contextual knowledge, whereas Specialized Staff Officers are more focused on their specializations. Thus, General Staff Officers must have a sound theoretical foundation in national security decision making, operational and strategic planning, as well as organizational behavior, and should think in terms of all the instruments of national power. Consequently, the officer education system must identify educational concepts for both classes of field grade officers that are often, if not always, useful for developing critical, reflective and creative thinking. The officer education system must equally be useful for developing effectively communicating field grade officers who are capable to manage their respective operational environments. To address the educational question more in detail, the next section analyzes concepts in the scientific study of adequate adult education theories.³⁵ That analysis provides some insight into how field grade officers may acquire those skills.

Professional Education – Building the Right Skills

Thus far, the research has been focused on establishing the skills German field grade officers must possess. Next, it is important to explore adult education theories to determine methods by which to develop those required skills. Because adult education is not the same as professional military education, the requirements of adult learning need to be related to

³⁵ Sharan B. Merriam, “The New Update on Adult Learning Theory”, *New Directions for Adult and Continuing Education*, no. 89 (Spring 2001): 1. Adult education consists of the learner, the learning process, and the context of planned learning.

professional military needs. Those findings will later be grouped into a rough model to assess both the Bundeswehr's reforms and the new curricula. The findings of this section highlight that the military institutional curriculum can enhance field grade officer analytical competencies when the curriculum incorporates a relationship of theory and practice through mental models, military history, appropriate contextual knowledge, learning by coached doing, as well as interpretation of situations through reflection. Moreover, this section shows that the curriculum must empower field grade officers with knowledge, skills, and understanding to become a self-directed learner.

Adult Education Theories

First, given the importance of self-directed learning in enabling field grade officers to cope with constant change, field grade officers need to learn how to learn. While training conveys a technical skill useful in accomplishing a particular task, education seeks to convey a thought process that can be applied in multiple circumstances.³⁶ Thus, professional military education has the goal of educating its officers to apply their analysis through a series of possible applications. On the other hand, education is closely related to learning,³⁷ but an exclusive theory of adult learning does not exist. In general, informal learning is integrated with daily routines, and the responsibility for learning rests primarily in the hands of the learner.³⁸ Organizational policies, practices, and culture can support informal learning through action, reflection and collaboration if learning is integrated with daily work routines.³⁹ Incidental learning is defined as a byproduct of

³⁶ Cynthia A. Watson, *Military Education: A Reference Handbook* (Westport, Connecticut: Praeger Security International, 2007), xv.

³⁷ Jack Mezirow, *Transformative Learning in Practice: Insight from Community, Workplace, and Higher Education* (San Francisco, CO: Jossey-Bass, 2009), 22. Learning may be understood as the process of using a prior interpretation to construct a new or revised interpretation of the meaning of one's experience to guide further action.

³⁸ Victoria J. Marsick and Karen E. Watkins, "Informal and Incidental Learning", *New Directions for Adult and Continuing Education*, no. 89 (Spring 2001): 28.

³⁹ Victoria J. Marsick and Karen E. Watkins, *Informal and Incidental Learning in the Workplace* (London and New York: Routledge, 1990), 12.

some other activity, such as task accomplishment, interpersonal interaction, sensing the organizational culture, trial-and-error experimentation, or even formal learning.

Victoria Marsick and Karen Watkins present a model that depicts a progression of meaning making and how to enhance informal and incidental learning.

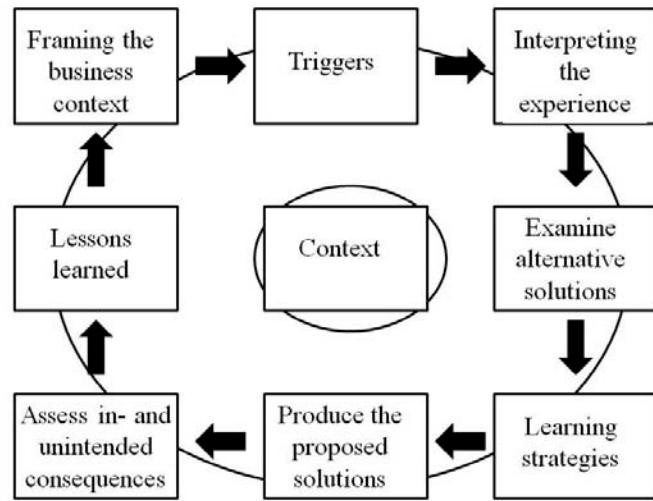


Figure 1. Marsick and Watkins's Informal and Incidental Learning Model⁴⁰

The model in figure 1 is arranged in a circle and the process of meaning making starts with an event that occurs (Trigger). The circle in the center shows that learning grows out of everyday encounters while working and living in a given context. The outer circle represents the context within the experience occurs. How people see the event depends on their worldview (Frame). “They compare the new situation with prior experience, identify similarities or differences, and use their interpretation to make sense of the new challenge.” People refine their diagnosis by interpreting the context and its influencing factors (Interpreting the experience). The interpretation itself is dependent on contextual knowledge and logical thinking to recognize the

⁴⁰ Marsick and Watkins, “Informal and Incidental Learning”: 29.

relevant factors. As the model highlights, the rationality of individual interpretations depends on the rationality of the contextual knowledge it embodies. Interpretation of the context leads to choices about alternative actions (Examine alternative solutions). If the solution calls for new skills, the adult needs to acquire these (Learning strategies). The step of judging outcomes then enables a person to draw lessons and to use these lessons in planning future actions (Produce, assess, and lessons learned). The lessons identified from that thinking process may refine the individual perspective or even replace it with a more effective one. The incidental learning process described in that model is always occurring, with or without the learner's conscious awareness.⁴¹ Although the model in figure 1 is arranged in a circle, the steps are neither linear nor necessarily sequential. With each new insight, adults may have to go back and question earlier understandings. If the Marsick and Watkins model reasonably represents actual informal learning then three conditions will enhance a field grade officer's ability to learn effectively. First, critical reflection serves to surface tacit knowledge and beliefs that influence how people frame their environment and the problem. Second, the learner's willingness to identify options actively and to learn new skills makes the officer open to learning. Lastly, creativity encourages a wider range of options. Thus, as a first step to enabling self-directed learning it is imperative to teach field grade officers strategies to make the learning cycle both more visible and more rigorous. Whether the field grade officer has the ability to learn how to learn, thus, is linked closely to his awareness of cognitive rigidity.

The officer's openness to learning is not the sole factor in imparting education method. The schoolhouse environment must consider the context of the field grade officer's working place and create a learning environment that closely represents the work environment. Thus, the learning and working environment will support development of the right skills. Instead of

⁴¹ Ibid: 25-30.

listening to lectures and getting prescriptions, actual learning is mediated by personal experience and shaped by discourse, observation, experimentation and reflection. Learning is inherently social. Adults act and interact within their social situations. Thus, real-world contexts, in which there are social relationships and tools (texts, computers, maps) make the best learning environments.⁴² Learning is ‘tool dependent’ because the setting provides mechanisms that aid, and, more importantly, structure the cognitive process. Finally, the interaction with the setting itself in relation to its social and tool dependent nature determines the learning.⁴³ In other words, experiential learning emphasizes doing the task in order to learn it. Learning is embedded in interactions (group dynamics) that take place in the context of practice (multiple perspectives and different experiences), and consists of sequential phases: observe the performance of an activity by experienced members, try out the activity while articulating the steps and afterwards reflect on them. Consequently, as field grade officers practice they adapt their way of thinking (self-directed learning), and generalize findings through discussions. The concept of learning in context stresses the importance of interaction and constructive communication. As a prerequisite for effective communication, field grade officers need a shared repertoire of communal resources that include routines, words, tools, and ways of doing things to ensure interoperability. To establish that interoperability and to facilitate the experience of sense making, the setting of schoolhouse exercises should be as close to the real world as possible. While the field grade officer is getting coached, he will increase his own ability to effectively mentor and coach other field grade officers later on.

⁴² Catherine A. Hansman, “Context-Based Adult Learning”, *New Directions for Adult and Continuing Education*, no. 89 (Spring 2001): 43. Awareness of context is developing a deeper appreciation and understanding of the personal and socio-cultural factors that play an influencing role in the process of transformative learning.

⁴³ Arthur L. Wilson, “The Promise of Situated Cognition”, *New Directions for Adult and Continuing Education*, no. 57(Spring 1993): 73.

Third, the professional officer education curriculum must incorporate situations like exercises and case studies in which the field grade officers learn to reflect. Today's rapidly changing environment requires field grade officers to acquire new perspectives in order to gain a better understanding of changing events. Critical reflection is the process by which adults question and then replace or reframe an assumption that up to that point has been uncritically accepted as commonsense wisdom.⁴⁴ In discussing the idea of reflection in general, Stephen Brookfield emphasizes the role of critical thinking in this process. Critical thinking occurs when people question information, ideas, or behaviors. According to Brookfield, the four components of critical thinking include identifying and challenging assumptions; recognizing how context influences thoughts and actions; considering alternative ways of living and thinking; and being unwilling to accept something just because it is always been done that way or because an expert says it is so. Brookfield suggests that a way to engage in critical thinking is to identify a critical incident or situation from practice that can be described and reflected upon.⁴⁵ Mezirow adds that reflection and discourse with a mentor, a peer or just with the individual as well as writings strengthen the reflective experience.⁴⁶ Neurobiology even shows that neural branching can be stimulated by questioning strategies that encourage divergent thinking. Inviting students to analyze the complex set of circumstances that make up an event can overcome the human brain's tendency to simplify events.⁴⁷ Knowledge is not simply discovered but is created through

⁴⁴ Mezirow, *Transformative Learning in Practice*, 2009, 7. Schön (*Educating the Reflective Practitioner*, 1987) suggests that professional practice involves the ability to perform in a situation without having to consciously think about it. For the military professional that may apply in a time critical situation on the battlefield but implies some risk. To the author, unconsciously thinking is not appropriate to deliberate operational planning conducted by a team.

⁴⁵ Stephen D. Brookfield, *Understanding and Facilitating Adult Learning* (San Francisco, CO: Jossey-Bass, 1986), 31.

⁴⁶ Mezirow, *Transformative Learning in Practice*, 9.

⁴⁷ Lilian H. Hill, "The Brain and Consciousness", *New Directions for Adult and Continuing Education*, no. 89 (Spring 2001): 75.

interpretation and reinterpretation in light of new experiences and, thus, requires conscious actions. Through discourse people discuss with others their new perspective in an effort to obtain consensual validation.⁴⁸ According to Lisa Baumgartner a safe, open, and trusting environment that allows participation, collaboration, exploration, critical reflection, and feedback as well as “group ownership and individual agency” will foster the process of sense making and learning.⁴⁹ Consequently, critical reflection or thinking can be learned and improved through education and training.

Additionally, critical reflection on a theory, in combination with thoughtful discussion, leads to a broader, more inclusive understanding of learning itself. Not what, but how we know is more important. Through consciousness-raising, field grade officers will come to see the world and their place in it differently. Empowered in their new perspective, field grade officers can act to transform information into a meaning. Therefore, field grade officers need firstly to learn the importance of reflection and should apply critical thinking in the context of military history, case studies, and other appropriate exercises. Moreover, professional officer education must incorporate the interplay between reflection and practice through communication. Simultaneously, field grade officers need to experience a learning oriented organizational culture and climate.

Next, history is a way of learning and, therefore, an essential part of field grade officer education. The knowledge of history suggests what has worked, or not worked in practice before and can be useful in understanding trends. Harold Stubblefield describes history’s unique tasks as follows: to explicate why the present arrangements, structures, and provisions exist; to probe into the social and ideological movements of the past that are expressed in present activities; and to

⁴⁸ Mezirow, *Transformative Learning in Practice: Insight from Community, Workplace, and Higher Education*, 9.

⁴⁹ Lisa M. Baumgartner, “An Update on Transformational Learning”, *New Directions for Adult and Continuing Education*, no. 89 (Spring 2001): 20.

seek to understand the origins, processes, and dynamics of change.⁵⁰ Thus, history becomes a way of learning. The value of history is to reflect critically on who we have been and where we have come from to better understand the possibilities of what we can become. So, in professional education history can be a source of inspiration and can be used as a tool to improve practice. History can serve as a means to encourage critical thinking through the analysis and interpretation of a historical narrative.⁵¹ Consequently, history can help field grade officers to gain an understanding of the operational environment in general. Moreover, analyzing historical case studies helps field grade officers to frame sharper questions about professional practice and, thus, may open up the opportunity to adapt military theories or doctrines.

Fifth, to become an autonomous learner, field grade officers need to develop the skill of learning to learn. Professionals are required to stay updated and credible throughout their careers (continuing professional education).⁵² Within the adult education community “learning to learn” is an umbrella term for becoming skilled at learning in a range of different situations and through a range of different styles. Learning to learn means that adults possess a self-conscious awareness of how it is they come to know what they know. It is an awareness of the reasoning, assumptions, evidence and justifications that underlie the belief that something is true. Senge even defines learning to learn as a skill for a lifelong learning project.⁵³ Thus, self-knowledge is the prerequisite for autonomy in self-directed learning and the goal of self-directed learning is to

⁵⁰ Harold W. Stubblefield, “Learning from the discipline of history”, in *Adult education: Evolution and achievements in a developing field of study*, edited by J. M. Peters, P. Jarvis, and Associates (San Francisco: Jossey-Bass, 1991), 325.

⁵¹ Sharan B. Merriam and Ralph G. Brockett, *The Profession and Practice of Adult Education: An Introduction* (San Francisco, CO: Jossey-Bass, 2007), 53.

⁵² Ibid, 13. Lifelong learning and lifelong education are more society focused and refer to a concept of education broader (“cradle-to-grave activity”) than adult education in which adult and continuing education are important but not exclusive players. Consequently, adult education and continuing professional education are more specific for PME.

⁵³ Senge, *The Fifth Discipline*, 7.

enable an individual to reflect on changing circumstances critically as prerequisite for effective learning. Self-directed learning focuses on the process by which adults take control of their own learning, in particular how they set their own learning goals, locate appropriate resources, decide on which learning methods to use and evaluate their progress.⁵⁴ But respected authors in this area point out those adults are not innately self-directed learners. Instead, adults need to learn self-directed learning to become more effective learners. Self-directed learning sets in motion the idea that the motives underlying adult learning can vary considerably.⁵⁵ Unfortunately, no research has revealed how various factors affect the decision of an adult to learn or how to measure the quality and effectiveness of learning itself.⁵⁶ Therefore, professional officer education should assist field grade officers to learn in a way that enhances their capability to function as self-directed learners. If field grade officers are to be self-directed learners, then it follows that the professional education system should integrate the required skills into the overall educational concept at an early point in an officer's career. Hereby, the field grade officer gets the chance to develop a self-concept that will provide him guidance throughout his career.

Finally, because an adult's motivation to learn depends on several factors, the professional education system might be an obstacle to self-directed learning. Field grade officers must have the opportunity to reflect on their self-concept and to adjust or even to change their perspective. The adult developmental perspective argues those kinds of experiences as well as perspectives change across the context of life. Thus, epistemological awareness has to be reframed from time to time.⁵⁷ In practice, some adults are self-directed; some are not and some

⁵⁴ Ralph G. Brockett and Roger Hiemstra, *Self-Direction in Adult Learning: Perspectives on Theory, Research, and Practice* (London and New York: Routledge, 1991), 20.

⁵⁵ Cyril Houle, *The Inquiring Mind* (Norman, OK: Oklahoma Research Center for Continuing Professional and Higher Education, 1993), 81.

⁵⁶ Brockett and Hiemstra, *Self-Direction in Adult Learning: Perspectives on Theory, Research, and Practice*, 81.

⁵⁷ Merriam and Brockett, *The Profession and Practice of Adult Education: An Introduction*, 146.

are self-directed only in certain situations.⁵⁸ Consequently, professional officers basically need orientation, support, and guidance in the first stage of a learning project, a new assignment, level of command, or when contextual factors such as level of command, power and control, or political policy change. In addition, Sharan Merriam and Ralph Brockett factor in that personal problems, lack of interest and time can deter adults from participating in optional learning.⁵⁹ To sum it up, a variety of factors can strongly hamper adult learning over the course of a career. To overcome the impediments to learning requires officers to expand their consciousness and self-awareness or alternatively requires the organization to direct participation in educational programs. Mandatory continuing education for field grade officers may create the conditions for self-reflection and for updating contextual knowledge that is relevant in a constantly changing environment.

In summary, the review of adult education literature shows that adult education seeks to encourage adult students to become autonomous learners while empowering them with knowledge, skills, and understanding to master their profession. The obvious conclusion is that learning in a profession is sense making through practical application. Equally, it has become clear that there is no such thing as one kind of learner. Neither there is only one learning goal, one way to learn, nor one setting in which learning takes place. Nevertheless, the discussion thus far has considered many elements related to adult learning but has not created a clear standard with which to assess the Bundeswehr reforms and new curricula. To create a standard requires that the observations here get assembled into a rough professional education model.

⁵⁸ Ibid, 30.

⁵⁹ Ibid, 134.

Implications for Professional Education Practice

The German operational environment and the educational theories that have been reviewed, thus far, suggest a number of approaches to producing an officer who is a self-directed learner, a critical, logical and creative thinker and adaptive. At the heart of the findings, field grade officers must have a certain consciousness about effective learning. In turn, awareness raising calls for a relationship between theory and practice that ends in a systematic understanding of the nature of learning. The research findings can be grouped together in a rough model that will here be named the Professional Military Learning Model. This model will be used later to assess the Bundeswehr's transformed education system. The model can also be seen as a tool to develop an effective professional military curriculum. The Professional Military Learning Model in figure 2 consists of four components.⁶⁰

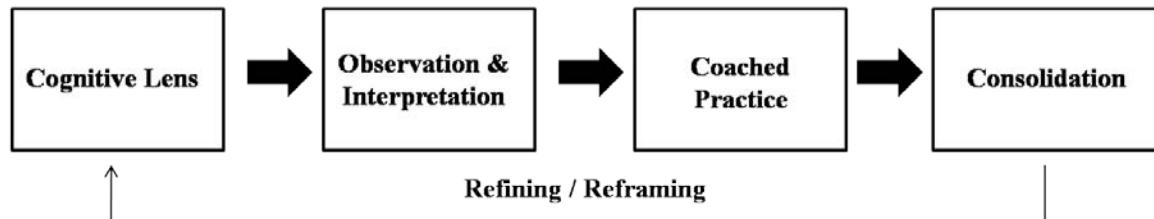


Figure 2. Professional Military Learning Model

The first component, the *Cognitive Lens*, provides field grade officers a perspective that responds to the operational environment of the Bundeswehr and provides the overall frame of reference for his actions. That step sets the conditions for understanding how the national and international security environment influences German national security policy and how joint, unified and multinational campaigns and operations support national objectives. The purpose of

⁶⁰ It is important to note that the elements in the model have an interdependent relationship; they do not stand alone. Their order is not just applicable within a single curriculum but also should be seen as an essential progression over the span of life.

that component is to understand the whole better and to expand the range of personal experience that is the best aid to judgment. The different kinds of theories inherent in the curriculum of the *Cognitive Lens* are meant to educate the mind of the field grade officer, or, more accurately, to guide him in his self-education.⁶¹ Field grade officers need to develop an individual perspective that refers to historical and contemporary references on the role of the military in general. That perspective requires sufficient grounding in theories concerning political development, the impact of war and civil war on political development and conflict transformation. Moreover, national security decision-making, current and emerging joint doctrine, and geo-strategic and regional assessments create the context in which field grade officer learn to recognize relevant factors that have an impact on acting in a unique situation. As mentioned earlier, organizational and systems theory are part of the *Cognitive Lens*'s curriculum and are used to grasp complexity in a more comprehensive manner. Lastly, the systematic understanding of the nature of learning must be a learning objective to support the development of self-directed learning.

In step two, *Observation and Interpretation*, field grade officers must apply and analyze those references in context of history or case studies to improve reflective judgment. Historical examples and case studies not only provide further contextual knowledge but also are a tool to visualize theories and give them a certain meaning. The curriculum of *Observation and Interpretation* requires from field grade officers to evaluate how the international security environment has changed over time and how decision-makers have developed national policy to respond to challenges. Field grade officers must analyze how those policies turned into executable military strategies, campaign plans and doctrine. Moreover, during that step the officer learns to consider the role factors such as geopolitics, geo-strategy, society, culture and religion

⁶¹ Carl von Clausewitz, *On War*, translated and edited by Michael Howard and Peter Paret (New York: Alfred A. Knopf, 1993), 141. Clausewitz was looking at the commander whereas the author is of the opinion that Clausewitz's argument is even valid for field grade officers.

play in shaping the desired outcomes of policies, strategies and campaigns. Above all, field grade officers must determine what facts are relevant and how those facts can be interpreted. Assessing historical military operations teaches a valuable lesson about using historical sources as well as the importance of understanding systems, cultures, and processes when making determinations of cause and effect. Field grade officers apply the analytical framework from the first developmental step and improve nuanced understanding of optimal learning in order to enhance better management of complex problems and self-directed learning.

The third step in the Professional Military Learning Model is *Coached Practice*. In this step, officers learn from experimenting.⁶² In exercises, field grade officers apply an analytical framework and have to identify the problem and determine political objectives, the military end state and termination conditions. Finally, field grade officers must assess appropriate military actions that respond to the problem. The students must demonstrate the ability to reveal important physical and social relationships relevant to a particular problem in the operational environment by developing a shared knowledge of the adversary, the geo-physical and demographic characteristics of an area, and the policies of Germany and its allies. The closer the context of the exercise is to the real world and the more interaction with the setting the better the outcome. The exercises should encourage diversity in analysis in order to allow for competing cognitive frameworks (with different underpinning assumptions) emerge.⁶³ Exercises force the field grade officer to organize his staff work and practice constructive interaction. Instructors observe the actions of the students and continuously provide feedback. Hereby their observations, guidance and reflections support developing field grade officer's skills. Outside the schoolhouse

⁶² Various methods like provocative questioning, visioning, foresight and insight analysis, scenario development, technology foresight, systems thinking or simulation foster divergent and emergent thinking, too.

⁶³ Robson, Cognitive Rigidity: methods to overcome it, 2005 *International Conference on Intelligence Analysis*, 3.

commanders, other senior field grade officers or even peers must act as coaches and mentors and, thus, help to interpret observations to facilitate individual and organizational learning.

Finally, the reflection and discourse with a mentor, peers or just with the individual gives experience a meaning. This component is the first step and is called *Consolidation*. During this step field grade officers reframe or refine a situation, a problem, a theory, or even an entire perspective. Therefore, after action reviews must be a mandatory step in every exercise and after every far-reaching experience like a deployment. Because officers bring with them their different experiences which influence their own understanding, *Consolidation* is the step during which the officers learn to convey and maintain thought processes that facilitate change.

Assessing the German Officer Education System

Now, having established criteria for evaluation, this section investigates the German professional officer education system and the Führungsakademie curricula as they seek to contribute to a positive educational experience for field grade officers. The analysis makes visible those aspects of the system and its curricula that differ from the criteria described in the Professional Military Learning Model. According to the Führungsakademie, over the last few years, the Bundeswehr field grade officer training and education has been reorganized fundamentally to address the changed security policy parameters and the global changes in society.⁶⁴ The training objectives are competence development in the domain of military trade skills, and enhancement of the officer's intellectual and professional self-concept. Another training objective is developing service personnel with analytical skills who are able to make political, social and ethical judgments and prognoses. Other learning objectives address producing leaders with considerable intercultural and social competences, capable of holistic thinking and leaders who are able to communicate and to motivate. Finally, the

⁶⁴ Führungsakademie der Bundeswehr, *Konzept zur Neuordnung der Stabsoffizierausbildung der Streitkräfte*, Kurzfassung.

Führungsakademie asserts that leaders must deal with conflicts and leaders must reach a consensus, while being extremely resilient. To better understand and appreciate the different German education components a brief description of the overall four steps of German professional officer education in figure 3 is helpful.

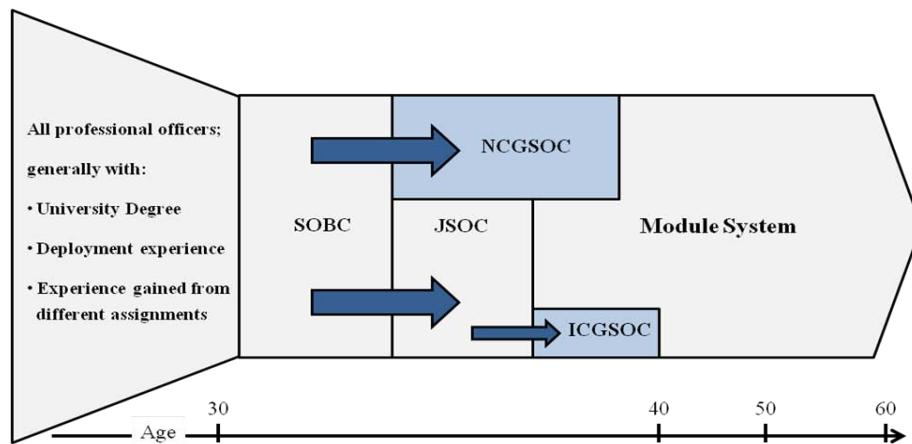


Figure 3. The German Professional Officer Education System⁶⁵

The first step in the officer education system is study at one of the two Bundeswehr Universities.⁶⁶ The university study occurs early in the officer's career, during which he earns either a Bachelor or a Master degree. During his four years of university studies, the officer has limited interaction with troops. In a second step all senior captains, normally during their eighth year of commissioned service, participate in the 3 ½ -month Staff Officer Basic Course (SOBC).

⁶⁵ Führungsakademie der Bundeswehr, *fueak flyer english* (Hamburg, Germany: 2009), 2. Online at http://www.fueakbw.de/share/g/002_Grundlagendokumente_FueAkBw/100_Stab/011_AbtlgPrA/116_Vordrucke_und_Formulare/fueak_flyer_englisch.pdf (accessed 28 January 2010)

⁶⁶ Attendance of a military university became mandatory in 1974. Both Bundeswehr Universities (Hamburg and Munich) are controlled and funded by the German Federal Ministry of Defense. The education authorities of the states Bavaria and Hamburg control the academic curricula and graduation requirements. Academic studies include Computer Science, Aeronautical Engineering and Space Technology, Civil Engineering, Political Science, Economic Science and Management, Electrical Engineering, Business Data Processing, Surveying, Sports, Education, Business Management, History, Mechanical Engineering, Commercial Engineering and Political Science.

In a third phase, all career officers who have graduated from SOBC must attend one of the Staff Officer Courses. About 12 ½ percent of career officers per year are selected for the 24-month National General and Admiral Staff Officer Course (NGASOC). Two and one-half percent will graduate from the 12-month International General and Admiral Staff Officer Course (IGASOC). The remaining 85 percent of officers attend the Junior Staff Officer Course (JSOC) that is 3 weeks long.⁶⁷ The fourth step in officer education is self-directed learning and education through a Module System of two-week courses to match the idea of lifelong learning. In fact, field grade officers in the German Armed Forces receive almost 90 percent of their formal professional education within the first half of their career. Their individual development in the second span depends on what they have learned so far, through mentoring or by voluntarily attending the modules at the Führungsakademie.

The Staff Officer Basic Course

All line career officers and selected medical officers of the Bundeswehr must attend the nine-week SOBC after their eighth year of service.⁶⁸ SOBC is the first course that addresses joint education and that course serves to develop among the officers a common knowledge and understanding of the Bundeswehr's operational environment. The overall course objective is to enable the officers to deal with the social aspects of the military and to prepare them for their assignments as staff officers. The curriculum includes a wide variety of contextual knowledge and theories. For a better understanding of the operational environment, the course curriculum provides a basic knowledge of social sciences and security policy, capabilities and contributions of the services to combined operations, command and control processes at national and

⁶⁷ Führungsakademie der Bundeswehr, *Konzept zur Neuordnung der Stabsoffizierausbildung der Streitkräfte*, 3.

⁶⁸ Führungsakademie der Bundeswehr, *Lehrplan fuer den Stabsoffizierlehrgang (SOL) 2009* (Hamburg, Germany: 2008), *passim*.

international levels, and principles of leadership and management including a professional self-concept. The course seeks an integral part of its overall goal to get the students to recognize the importance of adapting to an ever changing operational environment. The course seeks to enhance the field grade officer's ability to perform successfully in a regular assignment as well as in any deployment. The course ends with one written and two oral exams. Successful accomplishment is prerequisite for promotion to Major.

During the SOBC, the most prevalent learning method used to convey knowledge is teacher-centered. Less than 10 percent of 365 hours are experiential learning. The SOBC builds on the skills developed during the university studies. As a main effort, it links the thought process of "describe-analyze-conclude" with the professional military context at the operational and strategic level. During the exams, the officer has to demonstrate that he can apply that thought process to question logical theories and assumptions. The officers study the history of international organizations such as the UN, NATO, and the EU and analyze different countries and their security interests. Those case studies help to improve critical thinking through discourse in small groups, provide contextual knowledge and enhance the overall situational understanding of the German operational environment. Lessons about communication as well as visualization techniques do set the conditions for effective discourse. A joint exercise intends to train the interaction between the different services how to approach a common task. The exercise lasts fourteen hours and includes time for reflection-on-action. Thus, the curriculum of the SOBC contains elements that contribute to the field grade officer's problem solving ability and self-direction.

However, SOBC does not address self-directed learning. To support self-directed learning the SOBC needs to add a learning objective and learning strategies related to self-directed learning. Self-directed learning concepts appear randomly in the curriculum, but there is no deliberate learning objective related to producing self-directed learners. Moreover, the terms used in the curriculum refer to systems thinking, but the curriculum recognizes no learning

objective that addresses complexity effectively. Finally yet importantly, the course includes all services, but the curriculum does not consider the Operational Planning Process (OPP) that is used at the operational level of command⁶⁹ nor does the course incorporate military history to evaluate operational capabilities or to convey any sense of operational art in accordance with NATO Guidelines for Operational Planning (GOP). Consequently, the SOBC addresses only some elements of the *Cognitive Lens* and *Observation and Interpretation*. Moreover, the course length does not allow any repetition, which is needed to consolidate new experiences effectively.

In sum, the SOBC mainly provides basic knowledge about theories, relevant factors and their interrelations. SOBC does focus on theories and basic knowledge related to the operational and strategic level, but neglects operational skills necessary for operating at the joint level or while deployed. The overall learning objective focuses mainly on individual experience.

Although the course program lacks specific aspects of the optimal learning model it supports the long-term professional development of the officers and does not merely focus on the immediate follow-on duty requirements. The SOBC broadens officer's perspectives on military operations and enables them to pursue many individual and professional needs.

The National General/Admiral Staff Officer Course

After graduation from the SOBC and a detailed selection process, about 12 ½ percent of one class of officers qualifies for the NGASOC⁷⁰. They are among the top performers of their age groups, and some of them become generals or admirals. Since 2004, the NGASCO students have been organized into syndicates that include officers from the various services. The idea behind this approach is the concept of jointness and the insight that today military operations can only be

⁶⁹ Einsatzführungskommando der Bundeswehr, NATO etc.

⁷⁰ Führungsakademie der Bundeswehr, *Lehrplan fuer den nationalen Lehrgang Generalstabs- /Admiralstabsdienst 2009* (Hamburg, Germany: 2009), *passim*. Whereas field grade officers from NATO member states join the NGASOC field grade officers from non NATO member states attend the International General/Admiral Staff Officer Course (IGASOC). The IGASOC will not be issue of that monograph.

implemented successfully on a joint basis. In addition to the approximately 80 German officers, up to 30 foreign officers from NATO and EU nations attend the course. The purpose of the two-year NGASOC is to make field grade officer's fit for functions across the entire range of Bundeswehr tasks at the strategic, operational, and tactical level. Thus, the NGASOC represents the highest educational institutional level for the German Armed Forces and for the individual services. The curriculum comprises not only military topics but also presentations and seminars on social and economic issues. Special focus is placed on highlighting the interconnections between the sub-aspects in order to develop an understanding of the complexity and the development of international crises. The concept intends to develop and foster key skills like critical-reflexivity or academic learning. In essence, NGASOC extends the contents of the SOBC, deepens the officer's understanding and adds new topics. Tools for accomplishing those goals are a written thesis, several exercises at tactical and operational level as well as a four-week long practicum. The latter deals with foreseeing future developments and is coached by instructors as well as the staffs of the services and the ministry of defense. Currently, the NGASOC is not an advanced graduate level course. Every future General Staff Officer is observed and assessed in a very detailed and holistic manner in order to identify his potential.

The NGASOC curriculum incorporates a balance of theory and contextual knowledge, elements of military history and the analysis of worldwide crises from which to draw lessons learned, and more than 12 weeks of experiential learning through a variety of exercises at the Führungsakademie and in international exchange programs. Several excursions to national and international commands and political institutions help students to understand the interrelationship of different actors and to discover aspects of the complex operational environment. The timeframe is learner-centered and focuses on learning by repetition to consolidate effectively a new experience. Senior officers act as coaches and provide insight into national and international interrelationships. Nonetheless, as was observed during the discussion of the SOBC, the NGASOC curriculum does not highlight a learning objective explicitly associated with sense

making. To incorporate an explicit learning objective associated with learning strategies would complement the curriculum more effectively. Moreover, to frame the operational environment German field grade officers usually act along the operational factors of time, space, and forces as described in NATO guidelines for operational planning or the national military decision making process. However, the key to success in today's operational environment is to identify the uniqueness of a situation in order to approach the right problem. Thus, a systems approach would provide a far better tool for approaching complex problems. Finally, military theory and history are integrated barely into the NGASOC curriculum. To integrate military theory and history in the NGASOC curriculum has the potential to enhance the field grade officer's individual competence to adapt and change.

Nonetheless, in contrast to the SOBC, the curriculum of the NGASOC integrates almost all elements of the Professional Military Learning Model and even the sequence of topics (Roter Faden) itself matches the sequence of that model. Consequently, the NGASOC enhances the field grade officer's individual competence to adapt and change. Although Luke Grossman does not address systems or complexity theories, he supports that conclusion. In his monograph, "Command and General Staff Officer Education for the 21st Century: Examining the German Model," Grossman reaches the conclusion that the NGASOC curriculum provides its students the required tools and develops appropriate attitudes to enable them to continue to make significant and positive contributions to military operations at increasing levels of responsibility. The NGASOC curriculum develops a student's skill as a practitioner of the art of warfare.⁷¹

⁷¹ Luke Grossman, *Command and General Staff Officer Education for the 21st Century: Examining the German Model* (Ft. Leavenworth, KS: U.S. Army Command and General Staff College, 2001), 62.

The Junior Staff Officer Course

Just two years after graduation from the SOBC, all field grade officers who do not attend the NGASOC (around 85 percent) attend the JSOC.⁷² The course, which is just 14 training days long, seeks to prepare the Specialized Staff Officers to function as staff officers on national staffs, at command authorities, and in agencies. To achieve that goal the main effort of the JSOC seems to be experiential joint staff work. Moreover, the course wants to promote the officer's understanding in the domains of security policy and social sciences issues. For this, the curriculum implies a variety of electives to address the student's individual interests and competence areas. The primary learning methods applied are the so-called "activating methods" of adult education such as guided work in small groups or intensive action-oriented methods. The JSOC curriculum contains lessons on general leadership behavior, command and control process, and staff officer requirements, leadership development and civic education, operational staff work, security policy and social science issues, capabilities of the armed forces, and transformation of the Bundeswehr.

Because field grade officers attend the JSOC just two years after the SOBC, the JSOC again provides an update on Bundeswehr transformation and additional contextual knowledge. When JSOC is compared to the Professional Military Learning Model, it is clear the JSOC contains aspects of the *Cognitive Lens* by providing further knowledge about the Bundeswehr and other national issues. It does not integrate additional theories and their application. Learning from history or other case studies cannot be identified in the curriculum. The teacher- and learner-centered learning methods are more balanced than in SOC. Almost 36 percent of 114 hours are devoted to staff work exercises. So, the frameworks of the *Cognitive Lens* as well as the *Coached Practice* are set up. Five hours of reflection-on action or lessons learned is an essential part of

⁷² Führungsakademie der Bundeswehr, *Lehrplan fuer den Stabsoffizierfortbildungslehrgang (SFL)* (Hamburg, Germany: 2009), *passim*.

practice in the curriculum and matches the criteria discussed in the model component *Consolidation*. However, to adapt personal habits to the lessons learned and far more to consolidate the new perspective the field grade officer needs the opportunity to apply his new knowledge to consolidate it. Only one exercise in the curriculum fails to provide that opportunity. In addition, according to the overall concept of 2004, the course exercise will be at national tactical level that in general is questionable in a joint approach. Actually, even after 15 years of service most Specialized Staff Officers do not comprehend the operational planning process. The JSOC curriculum allots only two hours to teach the operational planning process. Furthermore, the JSOC is the starting point for the Module System that intends to ensure continuing education as part of the concept of lifelong learning. The JSOC curriculum allocates a few hours in which to present the concept of the Module System to the Specialized Staff Officers. Thus, the JSOC offers a tool to preplan the field grade officer's individual development through successive, self-directed education.

In sum, the JSOC's curriculum may enhance the field grade officer's ability to function within a staff in a specific functional area but it does not develop or improve critical and creative thinking. The academic work in JSOC does not match the steps of the Professional Military Learning Model. In fact, the JSOC is the last centralized institutional education for Specialized Staff Officers. The course provides a comprehensive view of the diverse tasks of a field grade officer but does not enhance any skills required to cope with a complex adaptive system or to become an autonomous learner. The curriculum is not broad and detailed enough to facilitate an appropriate level of understanding of factors that will and potentially will affect future military operations. Lastly, the introduction of the Module System familiarizes the Specialized Staff Officer with continuing educational opportunities, but does not enhance his ability for self-directed learning per se. In fact, the entire course does not equip field grade officers appropriately to deal with future change at the tactical, operational, and strategic level of operations.

The New Modular Education Philosophy

The newest addition to the German professional officer education system is the Modular Education Philosophy.⁷³ A Module System containing more than 50 different seminars and short courses supplements the program for continuing education at the Führungsakademie. Each course takes three to ten working days. The program encompasses a broad range of topics and will be adjusted continuously to the changing parameters of the state and society. The topics vary from nations, societies and the military, capabilities and structures of armed forces, Bundeswehr routine operations, command control and employment of armed forces, to individual command and control, and leadership and management competence. The objective is to bring each field grade officer back to the Führungsakademie approximately every 2-3 years for continuing education. To create an incentive for officers to attend, the officer evaluation report requires from the rater to assess the individual officer's initiatives to obtain continuing learning.

The modular structure allows for the timing, the content and the order of the seminars to be tailored to the assignment structure, the service requirements and the personal goals of the individual officer. Furthermore, it is based on preceding courses and enables field grade officers to prepare themselves for different functions in the armed forces or to continue their training in accordance with the credo of lifelong learning. It is a flexible program and can react to an ever changing environment on short notice. Depending on the field grade officer's career field, a Module can be made mandatory, or optional. However, the centralized professional education for all Bundeswehr field grade officers ends when the officer is 38 years old despite the fact that an officer retires around the age of 60 years.

⁷³ Bundesministerium der Verteidigung, Führungsstab der Streitkräfte, *Weisung für die modulare Fort- und Weiterbildung der Stabsoffiziere an der Führungsakademie der Bundeswehr* (Bonn, Germany: 2009), *passim*.

The Module System complements the goals of the 2004 transformation process of the Bundeswehr. In a time where knowledge is of short-term durability, the Module System itself provides decentralized opportunities for continuing education. In context of complexity, the different courses provide up-dated or new contextual knowledge to approach systems thinking more holistically. On the other hand, the Module System is just optional and, thus, does not acknowledge the obstacles that can prevent field grade officers from attending. Although the Module System is the sole pure innovation in the German professional officer education system it is not the panacea for developing the skills field grade officers need to possess in the contemporary and future operational environment.

The analysis of the various courses within the Bundeswehr's educational system reveals that only the two-year NGSOC fosters the capability for coping with experience and self-direction in its field grade officers. At the beginning of their careers, most of the officers complete academic studies at one of the two universities of the Bundeswehr in Hamburg and Munich. There they learn and practice academic work, improve their writing skills, develop systemic thinking, and learn how to self-organize. As they learn to do their own research, they also learn to use and judge that of others. The education at the Führungsakademie follows on from these studies and further develops the acquired skills and capabilities. The second half of the German professional officer career significantly relies on self-directed learning. However, the rapidly changing environment requires professional guidance to learn about changing circumstances and to reflect successfully on individual experiences. "It is impossible to conceive of a lifelong education system that does not have some provision for assisting self-directed learners as a central component."⁷⁴ German military thought deeply anchors critical thinking and reasoned judgment, whether achieved through studies at a civil university or inherent talent.

⁷⁴ Stephan Brookfield, *Self-Directed Learning: From Theory to Practice* (San Francisco, CA: Jossey-Bass, 1985), 77.

However, the military professional environment requires field grade officers to apply those skills in a constantly changing context that embraces a free flow of creativity to provide adequate answers. Rather than follow the finding that humans are not inherent learners, the Bundeswehr leaves learning among its field grade officers to chance! Moreover, the vast majority of its officer corps is not consciously enabled to deal with a complex adaptive system as prerequisite for effective adaptation.

Conclusions

The analysis of the Bundeswehr's Professional Officer Education System reveals that portions of the system provide the educational basis for producing field grade officers who can learn and adapt in a complex security environment. The strongest parts of the system are the initial university education and the NGASOC. In those programs, the officer has adequate time to reflect upon and repeat experiences developed through practice. Those programs also provide the academic context needed to understand the contemporary security environment from the perspective of a complex system. The other courses in the educational system lack important elements of the Professional Military Learning Model. The SOBC has a key function as far as it sets the conditions for further field grade officer development. However, it is too focused on just understanding the military operational environment to have much influence on a field grade officer's ability to learn and adapt. The JSOC is too short and despite the courses emphasis on practice, there is no time for repetition and consolidation. These courses are clearly focused on imparting performance related knowledge vice developing lifelong officer development. The Module System can provide opportunities to keep field grade officers current and can be tailored to particular career needs but they are not designed to produce self-directed learning skills. While it seems the NGASOC provides the best program in which to develop a field grade officer's self-directed learning skills, most officers do not attend that course. Thus, the results of the research suggest four recommendations.

First, the Bundeswehr must implement a service wide synchronized professional officer education strategy. In a variety of guidelines, the Bundeswehr in general refers to complexity and a rapidly changing environment without highlighting the skills field grade officers must possess. No overall concept gives specific guidance for professional officer education or a detailed rationale for educational requirements. Consequently, the curricula of the different field grade officer courses cannot refer to a common strategy and overall defined learning objectives. Such a strategy must clearly define field grade officer tasks, and must clearly differentiate between the needs of the two-folded officer corps as well as joint and service specific objectives. Moreover, an education strategy must ensure consistent synchronization of the different curricula. Finally, when addressed forthrightly, the goals inherent in the strategy will assist field grade officers far better to visualize and self-direct their individual development.

Furthermore, the Führungsakademie der Bundeswehr must incorporate learning objectives into the SOBC that reflect self-directed learning and coping with complexity. None of the different curricula refers to a learning objective that reflects self-directed learning and complex adaptive systems theory. Field grade officers need guidance how to deal with daily experiences as central piece of the idea of lifelong learning. The concept of lifelong learning only makes sense when the individual is able to master consciously critical thinking in combination with constructive interaction. Equally, field grade officers need guidance how to approach their complex operational environment successfully. The common core of SOBC serves as the foundation for all field grade officers, while post-core education of varying length by service, branch, career field and functional area already covers the needs for specialization. A learning objective should be added into the first field grade officer education curriculum. That objective should encompass the elements of self-directed learning and complex adaptive systems theory. Achieving that objective will enhance the field grade officer's ability to approach organizational learning and the process of transformation at its best. By implementing the Professional Military Learning Model as described in section two throughout all courses the Führungsakademie can

assist self-directed learning as a central component. The model is consistent with effective learning practices from the complex adaptive systems field and adult education field.

A third recommendation to improve self-directed learning and coping with complexity in professional military environment is to focus on military theory and military history. The analysis of the different curricula showed that the emphasis is on the current operational environment and excludes military theory and military history from the educational experience almost at all. Field grade officers must have a much more sophisticated understanding of the complex operational environment that builds on historical development to understand its dynamics, and to develop policies. For professional officers, it is also essential to look at military history from an operational point of view. That means to analyze the circumstances within an operational decision was made. Only by doing this the officer will understand complexity, the advantage of systems theory and will identify relevant factors or variables that contributed to that situation. Military theory and military history facilitate the development of critical thinking skills throughout the career of field grade officers. Consequently, the overall education strategy must integrate knowing and understanding military theory and military history as learning objectives into the different curricula over the whole lifespan of an officer's career.

Finally, continuing education must be mandatory at the senior level. Field grade officers must be challenged repeatedly to reframe their intellectual position and arguments in order to prevent cognitive rigidity. After the age of 40, no mandatory professional senior-officer education can be recognized in the German professional officer education system. For field grade officers, education is optional after attending the JSOC or the NGASOC. However, the findings in the area of self-directed learning and experience are significant. Military professionals need orientation, support, and guidance as they move from novice to expert in subject matter and learning strategies. Over time, experience will form our worldview and emotional concept. Thus, from time to time a coached reframing and consolidation of our individual competences and worldviews seem to be necessary to master effectively the complex adaptive environment.

To conclude, reflection on the requirements of today's operational environment along with an acknowledgement of it as a complex adaptive system puts a greater emphasis on the development of individual competence toward organizational learning and adaptation. Furthermore, the assumption that an adult is capable of directing his own learning over his life span is obsolete. Experience alone does not provide sufficient grounding in complexity. Adult learning shows that educational institutions must foster self-direction in their students so that they may continue to learn in the right manner. The reforms of the German officer education taken in 2004 met the context of broader changes and joint, interagency, and multinational strategic considerations but it also calls for further changes in educational emphasis to prepare Bundeswehr field grade officers more effectively to facilitate vital change.

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